

## **RADIOACTIVE WASTE MANAGEMENT IN CENTRAL ASIA**

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During the former Soviet Union (SU) period, various aspects of nuclear energy use took place in Central Asian republics of Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. Along with the peaceful use of energy there was nuclear testing for example at the former Semipalatinsk Nuclear Test Site (SNTS) in Kazakhstan or nuclear power development and uranium mining and milling industries in all four countries. After the collapse of SU these newly independent states whose regulatory bodies were set up recently faced problems with the proper management of radioactive waste and so called “nuclear legacy” inherited from the past activities. In all these countries radioactive waste (RW) has not been placed in licensed sites for the long-term storage and final disposal. There are some major classification schemes for RW classification. Radioactive waste are currently categorized depending on exposure dose rate at a distance of 0.1meter from the waste surface, or depending on their surface contamination or, finally, depending on the level of specific activity of radionuclides. These criteria are based on operational safety in handling and transport. For RW storage and disposal only the last item may be applicable but the values need to be determined in part based on the intention to limit long-term post-closure radiological impacts, not just on the basis of operational safety. This requires differentiation in accordance with the half-life, mobility and radio-ecological factors which are radionuclide dependent. To introduce a new RW classification scheme it should be necessary to develop rules for such classification. To solve the problem related to the lack of licensed RW storage and disposal sites, a minimum requirement is to develop criteria for RW disposal. In Kyrgyzstan the national legal and regulatory framework on radiation safety are not in accordance with the International recommendations, and the existing situation with regulations on radioactive waste is more than not sufficient. In Tajikistan there is no well-defined distribution of functions and scope of liability between the different state administrative bodies and subjects of monitoring and no efficient mechanisms for financing of rehabilitation and monitoring activities. The country still lacks for the provisions, requirements, norms and recommendations on safe management of radioactive waste and rehabilitation. The same situation is for Uzbekistan. The Regulatory Authority of Uzbekistan needs development of the regulatory basis and strengthening of its infrastructure on radiation protection of personnel, population and the environment in RW management at the uranium industry tailings impoundments. The Norwegian Radiation Protection Authority (NRPA) is working on a bilateral basis with all four countries to assist them in

development of effective and efficient relevant regulatory basis for radioactive waste management including: development of new classification for very low level radiation waste, development of the regulatory criteria for choice of sites for RW storage and disposal, and other defined documents taking into account the International standards and NRPA's own experience.